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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,752	12/08/2003	Mark M. Leather	7057-0044/010026S	4699

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EXAMINER

TUNG, KEE M

ART UNIT	PAPER NUMBER
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2676

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/731,752

Applicant(s)

LEATHER, MARK M.

Examiner

Kee M Tung

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The amendment filed 3/1/05 has been considered in preparing this Office action.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7-11, 13-17 and 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mastie et al (6,373,585 hereinafter "Mastie") in view of Zhu et al (6,323,860 hereinafter "Zhu").

3. Mastie teaches a graphics processing apparatus (Fig. 1) comprising an input mechanism (from client computers 4a, b, c); a control mechanism (6) configured to receive one or more items of data (printer files) from said input mechanism; one or more pipelines (14) configured to receive said items of data as instructed by said control mechanism; one or more graphics processing units (8a, b, c) coupled to said pipelines configured to perform one or more computations on said items of data. However, Mastie fails to explicitly teach or suggest said one or more graphics processing units owning a portion of screen area dependent on a number of graphics that are enabled. Mastie teach the printer controller can be enabled or disabled (Fig. 3). Zhu teaches the number of tile renders are corresponded to the number of tiles of the screen or the size of the tile, the larger the size of the tile, the less number of tile renders (col. 2, lines 36-46 and col. 13, lines 9-35). It would have been obvious to one of ordinary skill in the art

at the time the present invention was made to combine the teachings of functionality of determining the number of renders is based on the size of tile of Zhu into Mastie in order to more effectively or efficiently determine the number of controllers. Therefore, at least claim 1 would have been obvious by Mastie and Zhu.

As per claim 2, Mastie teaches said control mechanism is a mode bit (Fig. 3, enable bit 32 to indicate enable or disable).

As per claim 3, Mastie teaches said items of data comprise pixels (the printer file).

As per claims 4 and 5, Mastie teaches said control mechanism is configured to use all of said pipelines (when all printer controllers are unable) to simulate a high-end chip, or a subset of said pipelines (when one or more printer controllers are disable) to simulate a low-end chip (Fig. 3).

Claims 7-11 and 13-17 are similar in scope to claims 1-5, and thus are rejected under similar rationale.

Claims 19-23 are also similar in scope to claims 1-5, and additionally require different price to represent different number of features in the processing apparatus, and also are rejected under similar rationale because more features always costs more.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mastie et al (6,373,585 hereinafter "Mastie") in view of Zhu et al (6,323,860 hereinafter "Zhu") and Talnykin et al (6,714,200 hereinafter "Talnykin").

The teachings of Mastie and Zhu are given in previous paragraph of this Office action. However, Mastie and Zhu fail to explicitly teach the graphics processing unit comprising a raster color unit, a texture address unit, a scan unit, a pixel shader and a frame buffer. It is noted that it is old and well known in the graphics art that the graphics processing unit comprising all these units. For example, Talnykin teaches a computer system (Fig. 2) comprising a graphics subsystem (11) further includes geometry subsystem (131); scan conversion subsystem (132), raster subsystem (133), video subsystem (134), frame buffer (135), texture memory (136) and a printer (124). It is noted that the element numbers show in the drawing are not match with the specification, for example, 131 should be 231, 133 should be 233). It would have been obvious to one of ordinary skill in the art at the time the present invention was made to combine the teachings of graphics processing unit of Talnykin into the computer system of Mastie and Zhu because it is well known and well used in the computer art to add a graphics processing system in order to offload process/computation function from CPU and further to increase the overall system performance. Therefore, at least claims 6, 12 and 18 would have been obvious.

Response to Arguments

6. Applicant's arguments filed 3/1/05 have been fully considered but they are not persuasive.

Applicant argues that Mastie fails to teach, assigning screen ownership based on the number of graphics processing units that are enabled. The rejections have been modified in order to fully consider applicant's amendment. Zhu teaches the number of processors is based on the tile size and/or screen size. The bigger the size of tile is, the less the processor needs.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

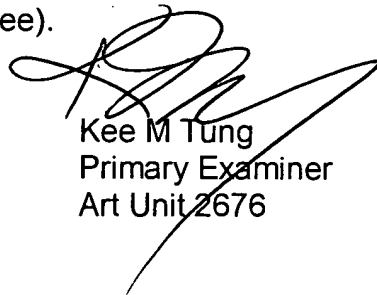
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kee M Tung whose telephone number is 571-272-7794. The examiner can normally be reached on Tuesday - Friday from 5:30 am - 4:00 pm.

Art Unit: 2676

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kee M Tung
Primary Examiner
Art Unit 2676